

**Colorado Department of Health
Hazardous Materials & Waste Management Division**

Comments

on

DRAFT

RFI/RI WORK PLAN

FOR

OU-12

(400/800 Area)

ROCKY FLATS PLANT

MAY, 1992

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General Comments:

1) The Phase I RFI/RI Workplan for OU 10 is the first workplan to be finalized in which an investigation of varied IHSSs within the industrialized portions of the plant is presented. While it is not necessary for the OU 12 Workplan to be identical to the workplan for OU 10, please refer to the final version for guidance. There were lengthy sets of comments and long discussions that set many ground rules for investigations in the industrialized portions of the plant and there should be no reason to re-invent the same concepts. Any presentation technique in the OU 10 Workplan that would enhance the clarity and/or brevity of this workplan should be incorporated.

2) The Division has repeatedly asked for a revision to SOP GT.8. The inconsistencies within the work plans for OUs 10, 11, 12, 13, and 14 for soil sampling reinforce the need for this revision. Inconsistency is also present in the HPGe programs and we have only been assured that an SOP is "under development." Unless and until SOP GT.8 is amended and an HPGe SOP is developed and both are **approved**, the Division will be unable to judge the adequacy of the FSP and will not approve the workplan.

3) This investigation must establish all of the parameters listed as requirements for RFI/RI Reports in the IAG - namely the nature, extent, concentration, and quantity of contamination as well as

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determination of the Baseline Risk Assessment. It is difficult for the Division to see how this can be assured given a vaguely defined staging of field sampling activities. Although the elements of a staged approach are evident, a clearer commitment to staging, comparable to OU-10, is warranted. This should be very carefully planned to ensure that the IAG objectives are met.

4) Portions of several of the OU 12 IHSSs lie beneath buildings. Since these portions of the IHSSs cannot be investigated and evaluated, they will need to be monitored until the buildings are removed. Specifically, this means that a sufficient number of ground water monitoring wells will need to be installed to determine if any contaminated water migrates out of the unit. While monitoring of this type is not within the scope of the RFI/RI investigation, determination of the extent and location of any present or past release from the unit is within the investigation scope. Therefore, we urge DOE to consider how the FSP could be modified since the logistical implementation necessary to satisfy both of these concerns could be the same (i.e., installation of wells).

5) Each activity and sampling methodology proposed for use in this workplan needs to have a specific section of the text describing the rationale of each sampling strategy and preferred methodology. For example, it is not clear why the CDH soil sampling methodology is proposed for soil covered areas and the RFP grab method is proposed for soils beneath paved area. Not only should the work plan give instructions to the individuals who will ultimately implement the plan but, more importantly, it must demonstrate to the Division and EPA that the plan represents a sound design.

Specific Comments:

Section 1.2: The first paragraph, page 4, refers to the Section 3 discussion of ARARs. Please revise the narrative to refer to the Benchmark concept that has been approved by CDH.

Figure 1-10: This figure does not depict the five mappable sandstones reported to be of the Arapahoe Formation but field mapped as Laramie Formation Sandstones (re: Section 1, page 21). A revised figure should reflect the latest interpretations on the stratigraphic assignment of the five sandstones with a caveat that the interpretation may change in the future.

Section 2.1: The third paragraph, page 2, states that UBCs and PACs are not addressed in the work plan pending finalization of the HRR. Although some issues remain that may need to be addressed in the HRR quarterly updates, the HRR is final. DOE should consider which PACs may be logically and efficiently incorporated into this work plan versus their inclusion into potentially new operable units. (The Division, as specified in Section I.B. 5 of the IAG

Statement of Work (SOW), will review the HRR to determine whether DOE will be required to initiate new RFI/RIs or amend existing RFI/RI Work Plans as specified by IAG, SOW, Section VI.A.)

Section 2.1.1: The discussion of the West (IHSS 116.1) and South (IHSS 116.2) Loading Docks should be divided. The "back and forth" discussion of the two units is confusing. Although they are similar units, the knowledge of their histories is sufficiently different to warrant a separate discussion.

Section 2.1.2: Discussion of the Cooling Tower Ponds should be subdivided. If necessary, the discussion of IHSS location discrepancies may be included in Section 2.1 rather than redundantly in each new subsection.

In paragraph 3, page 6, reference is made to various solutions used by Dowell in cleaning the Building 444 cooling tower. DOE must present "process knowledge" information on the types of solutions used. The only one reported for the East pond (first paragraph, page 7) is of particular concern. If any solvents were used in the cleaning process of either cooling tower, soil gas surveys will be required in the Field Sampling Plan (FSP).

Section 2.1.3: In the second paragraph, page 7, Figure 2-12 is reported to be of a guardhouse. The photo, which is ineffectual, is of building 440. From the Divisions's perspective a photo of IHSS 157.2 is not necessary. If a photo is included, it should be directed toward Building 444.

Reference is made in the first paragraph, page 8, to a ditch south of Building 444 where radioactivity levels were two and three times background. If possible, the locations of the soil samples should be shown on Figure 2-11 along with the corresponding radioactivity levels. If soil sample locations are unknown, the ditch should at least be labeled on Figure 2-11.

Reference is made in the second paragraph, page 8, to a uranium machine tool storage area. The location of the storage area should be shown on Figure 2-11. Was this storage area within the soil covered alcove on the west side of Building 444. If not adequately covered by the FSP for IHSS 157.2 additional sampling, i. e. surficial soil sampling, will need to be proposed.

The May 1960 incident (page 8, bullet 1) by which depleted uranium was deposited to the roof of Building 447 has not been specifically addressed in the Field Sampling Plan. The ability of the HPGe survey to quantify levels of radioactivity atop the roof are suspect. The FSP must be amended to state that the HPGe can properly survey from the ground (doubtful) or be expanded to run HPGe on the roof of Building 447.

Regarding the third bullet, page 9, please include a copy of RFP Photograph 13676-10 in the work plan. This photo is of interest relative to the extent of IHSS 136.2.

Regarding the second bullet, page 10, a further effort beyond the HRR is warranted to locate the vent pipe, gutter and the general area of release of process liquids to the ground or paved surfaces. Once determined, the FSP relative to IHSS 157.2 must be reviewed to determine its adequacy. The statement that paint may have been used to contain radioactive materials may help focus the search for the area of release. Moreover, the paint should be sampled given the potential for erosion or blistering of the paint to allow escape of radioactive materials. Soil sampling should be proposed at potential hot spots even if it is to confirm HPGe results.

Section 2.1.5: Discussion of the Fiberglassing Areas should be subdivided to provide clarity.

Section 2.1.7: Please removal all unnecessary references to IHSS 147.1 from the document except to note its transfer to OU-9.

Section 2.1.9: The chromic acid release reported under UBC 444 in the first paragraph, page 21, appears to be a significant event that should be investigated within this RFI/RI. The Division believes that its passage into the sewage treatment plant, via the footing drains, warrants its investigation at this time despite its designation as an UBC. Please propose an acceptable FSP for this site. (Footing drains have been discussed in the work plan as possible routes of contaminate migration; however, for this incident, and all other IHSSs in this OU, the FSP does not specifically target investigations to or below footing drains. Why?)

Section 2.2.1.2: Please revise this section to reflect the current status of the HRR.

Section 2.3.1: Regarding the third paragraph, page 29, EPA has determined that well 15889 is incorrectly located. Please revise all text and maps affected by this discrepancy.

Section 2.3.2: Regarding the first paragraph of this section, discharges from Pond C-2 are currently directed to the Broomfield Diversion Ditch such that neither Woman Creek nor Standley Lake receive water from Pond C-2.

Regarding the second paragraph, page 35, it is stated that "Available analytical data collected during site-wide monitoring of these and other footing drains and sumps will be obtained during the RFI/RI and evaluated." What specific site-wide monitoring includes footing drains and sumps? Which drains and sumps specific to this OU are of value? Monitoring locations of footing drains and sumps should be shown in the work plan to allow the Division to

determine the adequacy of the FSP.

Section 2.4.2.2: In the first paragraph, page 49, the comparison of PU-239 with the isotopic mixture of PU 239/240 should be avoided. DOE may need to find or determine the background data expressed in terms of the same isotopes as the measured OU data.

Near the end of the first paragraph, page 49, tritium concentrations for soils are compared to the upper tolerance limit of 410 pCi/l. Should this be pCi/gram?

Section 2.5.1: The statement is made that "it is unknown if ground water has been historically impacted." Without wells specific to OU-12, it is difficult to "know" that OU-12 IHSSs impacted the ground water; nevertheless, the analytical data from nearby wells suggest a possible, if not probable, impact. It is reasonable to assume that an impact has occurred such that implementation of the FSP can provide a specific knowledge, pro or con. It is therefore inappropriate to exclude ground water from the conceptual model (1. e. Figure 2-39).

Section 2.5.4: Gathering data to support a BRA is a primary goal of the RFI/RI, but not the only primary goal. An RFI/RI must also be designed to determine nature of extent of contamination. If the BRA is based on an incomplete assessment of nature and extent the subsequent comprehensive BRA may be flawed if based on understated contamination levels.

Figure 2-3: An additional drain was found during a June, 1992 visit to the site in the vicinity of the photo vantage point. Please add this to the figure and also to Figure 2-7. The two footing drains currently shown on Figures 2-3 and 2-7 were also found to be further east than depicted. They are located in the soil areas on each side of the loading dock driveway. Please revise.

Figure 2-5: The concrete abutment is approximately one foot wide, three feet high and is immediately adjacent to the west side of the dock with a short southward extension beyond the dock.

Figure 2-9: The eastward extension of Building 444 is designated Building 445 as observed during the June site visit.

Figure 2-13: The June site visit has confirmed that the photo vantage point for Figure 2-17 is incorrect. The correct vantage point is northeast of Building 452 looking due south.

Figure 2-39: The exclusion of ground water from the Site Conceptual Model is unacceptable. A primary goal of this RFI/RI is to determine if ground water has been impacted. Given the potential for impact, the pathways must be set forth in the flow chart. Attached to these comments is a revised version of Figure

2-39 showing the Division's thoughts on an acceptable flow chart. Please contact the Division with any questions or comments on this issue prior to submittal of the Final Work Plan.

Section 3.0: This section must be revised to fully reflect the change from ARARs to Benchmarks. Currently, the discussion of benchmarks does not begin until page 4 of the section. Prior to revision, please refer to the Division's letter of June 12, 1992 on Chemical-Specific Benchmarks Tables (re: Gary Baughman, CDH to Martin Hestmark, EPA with copy to Rich Schassburger, DOE). Attachment A of the letter provides our guidance on the key points of benchmarks to establish detection limits and ARARs to establish cleanup standards.

Attached to our June 12, 1992 letter are comments to DOE's Chemical-Specific Benchmark Tables. Please revise, as appropriate, Tables 3.1, 3.2 and 3.3 of this work plan.

Section 3.1.2.3: The last sentence of page 6 should refer to PRGs in Section 3.2 not 3.2.5.

Section 4.1.3: In the second paragraph of this section, pumpage and irrigation should be added to the text and also to the flow chart, Figure 2-39, as revised and attached.

Section 4.1.4: An RFI/RI is intended as a data gathering step toward a decision on whether remediation is necessary and, if so, the appropriate remedial alternative. The text should be revised to reflect that Corrective Measures Studies/Feasibility Studies (CMS/FS) and Corrective Action Decisions/Record of Decisions (CAD/ROD) are steps toward the final decisions.

The next to last bulleted item of page 7 supports the Division's call for the inclusion of ground water into the site conceptual model, Figure 2-39.

Regarding the last paragraph of page 15, the Division notes that the FSP for IHSS 157.2 is based on a square versus triangular grid. Please explain why the triangular grid is not proposed for this IHSS.

Section 5.3.2: Regarding the third paragraph, page 6, minor changes in implementation of the work plan need only be reported in the RFI/RI Report. This would include minor adjustments to screening and sampling locations warranted by site conditions. As conceptually agreed in the scoping meeting of April 6, 1992, DOE will submit screening data to the Division along with a rationale for proposed locations of soil borings and monitoring wells, etc. in lieu of a Technical Memorandum (TM). This will enable DOE to proceed on a fast-track, yet provide for Division input and concurrence. Once this stage of the work plan has been completed revisions and additions needed to define nature and extent of

contamination will necessitate a TM as correctly stated in the third paragraph.

Section 6.0: DOE needs to clarify, in this section, that sampling will continue to the edge of any possible contamination anomaly, even if this is past the edge of an IHSS. This is necessary to establish the extent of any contamination as a stated objective of Section 4.0.

Section 6.1: Regarding the second paragraph, page 2, one primary goal of an RFI/RI is to determine the nature and extent of contamination. Given the limited scope of the FSP, clearly one or more Technical Memoranda may need to be proposed, approved and implemented prior to DOE's issuance of the RFI/RI Report. The subject paragraph should be revised to reflect such a commitment.

Section 6.2.1.1: Regarding the first paragraph of this section, the Division is concerned about a 195 foot field of view for each HPGe sample. This method may be appropriate for an area with uniformly distributed contamination but is likely to lead to erroneous data in an area like OU-12 in which radionuclide contamination is more likely to be found in distinct hot spots resulting from historical spills or other discrete human activities. The assumption that "...radionuclide distribution is relatively homogeneous over the field of view, and that the distribution varies only with depth" is not likely to be the norm for this OU and is of major concern. DOE must demonstrate the ability of HPGe to both detect and locate hot spots with the proposed large grid spacing (100 foot centers - IHSS 157.2) or revert to a much smaller grid. (The Division notes that the proposed OU-8 work plan HPGe stations are laid out on approximate 30 foot centers.)

The proposed method will provide one data point, expressed in terms of pCi/g units for each survey point covering a 195 foot circle. This result will purport to represent the average radionuclide concentration over the area. The detector has no capability to determine the distance of a gamma source within the viewed area. Therefore, a hot spot immediately below the detector will result in a larger reported concentration than a hot spot at the edge of the field of view of the detector. Although the method may be valid for predicting radionuclide concentrations in soils in the upper soil layer for areas with uniformly distributed contamination, the use of such wide grid spacings in this type of OU is likely to provide results which are not consistent with actual soil concentrations.

Regarding the development of a SOP for the HPGe, DOE needs to accelerate its efforts to prepare this SOP as indicated previously in the General Comments section. It is difficult to provide comments on procedures without the detailed procedures having been submitted. Furthermore, a SOP for the laboratory HPGe, assuming it

will become available and approved for the work plan, must be developed.

Regarding the last paragraph, page 5, surficial soil samples and depth profile samples must be randomly located to confirm both HPGe negatives and positives. Collecting samples at the HPGe stations does not provide a suitable level of confidence that HPGe results are accurate.

Also, the use and reliability of a laboratory HPGe has not been demonstrated to the Division; therefore, it is inappropriate to substitute this technique for the standard radiochemistry lab analysis. At a minimum, lab HPGe results will need to be confirmed by a subset of radiochemistry lab analysis or documentation must be submitted that properly demonstrates lab HPGe accuracy and precision based on test results.

Regarding the first paragraph, page 6, it is stated that "... more extensive programs of surficial soil sampling for radionuclides will be conducted in paved areas." Please clarify how the soil below the pavement is being given more extensive treatment than soil covered areas when the grid spacing is generally the same (note especially Figures 6-4 and 6-5). With depth profile samples not to be collected in paved areas, it appears to be even less extensive. Please acknowledge that radionuclides deposited before an area was paved may have moved downward to the same extent as in soil covered areas given the probability that they were attenuated at or near the surface. Sampling of the concrete and asphalt certainly do not constitute soil sampling and thus is not more extensive.

Regarding the second paragraph, page 6, please clarify the term offsite radionuclides and how they will be distinguished from onsite releases of radioactive materials.

Regarding the last paragraph, page 6, please provide the status on availability of a lab HPGe in relation to the OU-12 RFI/RI Schedule. Approval of the work plan as currently proposed will depend, in part, on the availability of this instrument.

Section 6.2.3.1: Referring once again to the first paragraph of page 6, a 0-2" grab sample for paved areas is less extensive than a depth profile sample, i.e. 0-2, 2-4, 4-6". Please specify how the paved areas are receiving more extensive sampling.

Also, please clarify whether the plug-type sampler or scoop sampler are equivalent to those described in Sections 6.3 and 6.2, respectively, of SOP GT.8. The Division has previously noted weaknesses in GT.8 and has specified that it be modified (OU-11 comments May 8, 1992); consequently, references to soil sampling techniques must be precise by name and procedure number (e.g. Section 6.3) pending revision of GT.8. Also in keeping with the

soil sampling procedures of OU-11, the sampling of unpaved areas should use the meter square template approach and collect five subsamples at each surficial soil sampling station. This procedure should be applied whether CDH 1/4 inch sampling or RFP grab sampling is being employed. Given both the difficulty of access and the decreased potential for disturbance, sampling beneath paved surfaces may be limited to one sample versus five subsamples. (Please note: The Division still expects that SOP GT.8 be updated to reflect the meter grid sampling protocol.)

Section 6.2.3.3: Regarding the last paragraph, page 11, the Division requests that DOE attempt to prepare SOPs for vadose monitoring and leachability testing prior to the resubmittal date of this work plan.

Section 6.3: Consistent with our comments on Section 6.2.1.1, the statement on page 14 that "...where HPGe measurements are representative of radionuclide activities in soil, minimal numbers of confirmatory surficial soil and depth profile samples will be collected." DOE must show that the HPGe measurements are representative before this statement will be accepted. Hot spots must be capable of being identified. Note that Section 6, Page 39 admits to "moderate area averaging" when describing the capabilities of the HPGe system.

Regarding the last paragraph, page 16, the Division acknowledges the difficulty of determining the grid required to meet a strict statistical objective. However, the Division expects that the data obtained through implementation of the FSP will allow DOE to determine the level of sampling needed to achieve a 95% confidence level. Viewed as a staged approach, the FSP as proposed should support subsequent rounds of sampling within the time frame of the IAG schedules. DOE should prepare a budget which assumes a staged approach. Additionally, the Division requests that DOE revise the work plan to clearly show a staged approach and potential investigation activities comparable to the OU-10 RFI/RI Work Plan. To develop greater consistency among work plans of the industrialized area of RFP, DOE should determine the relevant need, based on screening data (Stage 1), for lysimeters and BAT sample collection techniques. Additionally, the applicability of the Sodium Sampling Probe Radiation Survey to this OU should be considered.

Regarding the second paragraph, page 18, please specify the source of the 90%/90% protocol for reporting an IHSS to be clean. The Division's policy is that IHSSs where 95% of a population falls within two standard deviations of mean background will be considered clean.

Section 6.3.1: The surficial soil sampling program planned for IHSSs 116.1 is unclear in more than one respect. Will the CDH, modified RFP or vertical profile sampling approach be used? The

CDH approach is specified for a similar surficial soil sampling effort at IHSS 136.2.

Furthermore, the first paragraph, page 21, states that "To verify results obtained from the HPGe detector two surficial samples will be split and sent to a laboratory for radionuclide analysis." Contrast this, please, to footnote "b" of Table 6.1 where three surficial soil samples and three depth profile samples will be submitted to the laboratory for radionuclide analysis. The Division cannot discern the method of sample collection for the surficial samples (CDH or RFP), whether two or three samples are proposed, and whether the footnote "b" surficial samples are to be split or to be analyzed by the laboratory HPGe instrument versus conventional methods. References to the appropriate SOP, and as necessary to the specific section of the SOP, must be made. Additional SOPs, or further revision of existing SOPs, may be warranted.

It appears that footnote "b" may have been intended for IHSSs 120.2 and then been inadvertently applied to this IHSS. (The discussion of IHSS 120.2 sampling and analysis is clearer but could benefit from some modification.) DOE should very carefully consider the apparent discrepancies between Table 6.1 and the narrative, further define the SOP method for surficial sampling, and define the specific laboratory method.

Lastly, DOE should discuss the specific rationale for splitting samples. Are both splits being analyzed, if so, how? Is one simply being retained for possible verification?

Regarding the discussion of ground water elevations, third paragraph, page 22, how will seasonal variations in the water table be monitored if the top of the screen is placed two feet above a fluctuating water table?

Is sampling proposed as a one time event or will the wells be turned over to a sitewide program for periodic monitoring and sampling?

Section 6.3.2: The comments to Section 6.3.1 on surficial soil sampling are applicable to IHSS 116.2.

Section 6.3.3: The comments to Section 6.3.1 on surficial soil sampling are applicable to IHSS 136.1.

Referring back to the Division's comments on Section 2.1.2, DOE must consider process knowledge to establish the potential for volatile organic solvents and the need, if any, for soil gas surveys at IHSS 136.1 (and also IHSS 136.2).

If possible, please include in the work plan a copy of an aerial photographic mosaic for the West Pond. Regarding the third

paragraph, page 25, since Building 447 was in service prior to the West Pond and presumably is depicted in the aerial photo, please amend the West Pond location and, accordingly, the FSP. The Division does not wish to perpetuate an inaccurate location.

Regarding the second paragraph, page 26, the use of colorimetric screening methods for hexavalent chromium concentrations is acceptable for targeting contaminant hot spots for further investigation. However, a colorimetric detection level of 0.1 milligram (100 ug/l) does not support the Benchmark Values of Tables 3.2 and 3.3 at 50ug/l. If hexavalent chromium is not detected in any sample, DOE must still ensure that levels to 50 ug/l are detected by CLP analytical methods.

Section 6.3.4: According to Figure 6-4, and the June site visit, the area west of the security fence is asphalt paved not soil covered. Is there an impact on the FSP?

Regarding the third paragraph, page 27, it is somewhat difficult to visualize how the drainage ditch could have been identified as a pond from aerial photographs. Was there actually a pond or did Dowell merely allow the cleaning solutions to escape via the ditch? Unless a pond, without an discharge point, can be confirmed, DOE must include hydrologic probe and boring locations within the ditch downgradient from the IHSS.

A nested tensiometer station is shown on Figure 6-4. Please refer to the tensiometer in a manner comparable to that given on page 34 for the Fiberglassing Area (IHSS 120.1).

Section 6.3.5: Regarding the second paragraph, page 30, DOE states that "... a minimum of 38 surficial samples will be collected from alternating nodes on a 50-ft grid...." DOE should verify the radionuclide levels at non-node locations by redistributing a portion of the 38 samples and/or allocating additional samples.

Please show tentative locations of the four concrete and asphalt core samples on Figure 6-5. This should lessen the chance of them being overlooked during plan implementation.

Also, in the second paragraph, eight surficial soil samples appears to conflict with footnote "b" of Table 6.1 (See comments to Section 6.3.1).

Section 6.3.6: Reference is made, on page 32, to the potential applicability of turbidimetric methods. The applicability of this, or any other method, should be determined before it is proposed in the work plan. If a determination is not possible at this time an alternate method should be proposed. In either case, the appropriate SOP must be referenced or a SOP addendum proposed.

Section 6.3.7: Regarding the third paragraph, page 33, the splitting of one surficial and one depth profile sample is more consistent with Table 6.1 footnote "b" than noted for the preceding IHSSs; however, one surficial and one depth profile sample are inadequate for laboratory analysis. A minimum of two samples each should be proposed for full radionuclide analysis.

Section 6.3.8: Regarding the first paragraph, page 35, this is the clearest discussion of the radionuclide sampling and analysis program; nevertheless, it too is not fully consistent with footnote "b".

Based on the last sentence, first paragraph, page 34, it appears that the statement at the top of page 36 should read "four samples will be analyzed for TCL volatile organics, and three samples will be analyzed for radionuclides, i. e. volatiles should not be proposed twice for analysis.

Section 6.3.11: Any stored hazardous waste or depleted uranium waste, if present, should be removed from this IHSS prior to sampling.

Section 6.4.2: Please clarify HPGe's ability to detect Plutonium. As an alpha emitter plutonium is not directly determined by the HPGe method but must be estimated through some sort of equilibrium calculation. In reviewing the document "In-situ Surveys of the United States Department of Energy's Rocky Flats Plant", (EG&G-10617-1129, UC-702, May 1991) we note the authors statement: "... it is often assumed that parent and progeny radionuclide of natural decay chains are in secular equilibrium in undisturbed soils. However, in most soils, secular equilibrium has been disturbed". This document made no attempt to determine plutonium concentrations in the surveyed areas but only reported Americium-241 concentrations. If equilibrium considerations are to be used to predict plutonium concentrations, the proposed calculation methods and factors must be described. Please add this information to the work plan.

The use of a laboratory HPGe detector is discussed in this section. What DQO Analytical Level does this provide, Level I, Level IV? Is the level adequate for the baseline risk assessment?

Section 6.4.3: The rationale for differentially sampling soils based on presence or absence of pavement must be discussed. Why is the CDH method proposed for non-paved areas while a 0-2 inch sample is proposed for soil beneath paved surfaces? The Division believes that for soil covered areas, a one meter grid template should be used to collect five composite samples from a 0-2 inch depth.

Reference to Technical Memorandum (TM) 5 of OU-1 is unacceptable. Sampling crews should not be referred to other work plans or TMs. The procedures described in TM 5 must be incorporated into SOP GT.8

or a SOP Addendum.

Section 6.5.3: Table 6.3 lists the analytical parameters of interest, not Table 6.4.

Table 6.1: This table needs to be reorganized. Although the docks, ponds and fibreglassing areas are physically and historically similar for each grouping, the FSP for each IHSS is not. The number of Samples/Borings need to be differentiated so that the Division can clearly see what DOE intends to do at each IHSS. The maps do provide some clarity, but the compounding of symbols tends to mask the frequency for each sample type. Also:

IHSS 120.1/120.2: Why is a Concrete/Asphalt sample proposed for IHSS 120.2 where there is less pavement than at IHSS 120.1 where the paved area is greater? Is it related to the radionuclide storage issue in Building 664?

IHSS 147.2: For the activities Surficial Soil and Depth Profile samples please show the No. of Samples, i. e. two (2) for each.

Please complete footnote "e" on page 6 of Table 6.1.

Figure 6-3: Please note that four of the soil sampling locations shown are largely redundant to those shown on Figure 6.1 and need not be duplicated.

Figure 6-5: The Ingot Open Storage Area is shown on the figure; however, surficial and depth profile soil samples are not specific to this potential area of contamination. Please demonstrate how the proposed IHSS 157.2 FSP is adequate or propose specific sampling activities.

Figure 6-6: The Division does not believe that the FSP for the IHSS 187 Sulfuric Acid Spill is adequate. Why are samples not proposed along the ditch and at the site of the spill impoundment to determine the full nature and extent of the release?

Figure 6-8: If the Surficial Soil/Depth Profile sampling locations shown are tentative, please indicate in the legend. If not tentative, please redistribute the sample locations from the southwest corner of the IHSS.

Please show tentative locations for concrete/asphalt samples as specified on page 35, Section 6.0. This should ensure that the sampling will occur.

Figure 6-11: Please use HPGe at the corners and center of this IHSS for a total of five stations. Randomly distribute four surficial soil sampling stations over the IHSS.

Section 7.0: Submittal of this work plan occurred on May 8, 1992, not March 8, 1992.

Regarding the last sentence, page 2, schedule revisions must be requested two weeks prior to a due date and be based on valid reasons, they are not automatic.

Section 8.1: Parts B and C of the Risk Assessment Guidance for Superfund were released on December 13, 1991 (OSWER Directive 9285.7-01B and -01C) and should be referenced on page 3. These documents should be reviewed and, as appropriate, incorporated into this work plan.

Section 8.1.2: The onsite residential use scenario, third paragraph, page 5, cannot be excluded from the risk assessment based on DOE's future land use plans.

Figure 10-1: Please update the figure to include the current personnel assignments.

